

FORM PTO-1390 (Modified)
(REV 11-2000)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

215790US6PCT

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR

09/926610

INTERNATIONAL APPLICATION NO.
PCT/SE00/01099INTERNATIONAL FILING DATE
26 MAY 2000PRIORITY DATE CLAIMED
27 MAY 1999

TITLE OF INVENTION

ELECTRIC SWITCHING DEVICE

APPLICANT(S) FOR DO/EO/US

Gunnar ASPLUND, et al.

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (24) indicated below.
4. ☒ The US has been elected by the expiration of 19 months from the priority date (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c) (2))
 - a. ☐ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☒ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
 - a. ☐ is attached hereto.
 - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))
 - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☒ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).
11. ☒ A copy of the International Preliminary Examination Report (PCT/IPEA/409).
12. ☒ A copy of the International Search Report (PCT/ISA/210).

Items 13 to 20 below concern document(s) or information included:

13. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
14. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
15. ☒ A **FIRST** preliminary amendment.
16. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
17. ☐ A substitute specification.
18. ☐ A change of power of attorney and/or address letter.
19. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.
20. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
21. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
22. ☐ Certificate of Mailing by Express Mail
23. ☒ Other items or information:

Request for Consideration of Documents in International Search Report
Notice of Priority

215790US

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
GUNNAR ASPLUND ET AL : ATTN: APPLICATION DIVISION
SERIAL NO: NEW U.S. PCT APPLN :
(Based on PCT/SE00/01099)
FILED: HEREWITH :
FOR: ELECTRIC SWITCHING DEVICE :

PRELIMINARY AMENDMENT

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

Prior to a first examination the merits, please amend the above-identified application
as follows:

IN THE CLAIMS

Please cancel Claims 1-8 without prejudice.

Please add the following new Claims 1-9:

9. (New) A switching device comprising:

a switching means for making or breaking a current path between a first cable and at
least one second cable, which cables have an electric conductor, an inner semiconductive
layer surrounding the conductor, an electrically insulating solid cable body surrounding the
inner layer, and an outer semiconductive layer surrounding the cable body;

a field controlling device surrounding the switching means and comprising at least
one conductive or semiconductive field-controlling body connected to a first potential;

an electrically insulating solid body surrounding the field-controlling means,
a conductive or semiconductive shield surrounding the insulating solid body
connected to a second potential, and

at least first and second contact members movably arranged in relation to one another,
where the first contact member is electrically connected to the conductor of the first cable
and the second contact member is electrically connected to the conductor of the second cable.

10. (New) A switching device according to Claim 9, wherein the contact members
are configured to be operated by an operating device between a closed position and an open
position.

11. (New) A switching device according to Claim 9, wherein the switching means
comprises semiconductors which close or open the current path when controlling the
conductivity of the semiconductors.

12. (New) A switching device according to Claim 9, wherein the field-controlling
body is electrically connected to any of the inner semiconductive layers of the cables.

13. (New) A switching device according to Claim 9, wherein the shield is
electrically connected to at least one of the outer semiconductive layers of the cables.

14. (New) A switching device according to Claim 9, wherein the shield is
electrically connected to ground.

15. (New) A switching device according to Claim 9, wherein a first and a second
coil are arranged at an outside of the switching device and generate a magnetic field in the
switching chamber which forces the contact members to a predetermined position.

16. (New) A switching device according to Claim 9, wherein the movable contact
member is configured to be operated by an insulated drawbar.

IN THE ABSTRACT OF THE DISCLOSURE

Please cancel the original abstract on page 11 and insert the following new abstract therefor:

ABSTRACT OF THE DISCLOSURE

A switching device including a switch with two contact members arranged movably in relation to each other for making or breaking a current path between two cables with an electric conductor, an inner semiconductive layer surrounding the conductor, an electrically insulating solid cable body surrounding the inner layer, and an outer semiconductive layer surrounding the cable body. The switch includes a field-controlling device surrounding the switch and at least one conductive or semiconductive field-controlling body connected to a first potential, an electrically insulating solid body surrounding the field-controlling device, and a conductive or semiconductive shield surrounding the insulating solid body connected to a second potential. The field-controlling body can be electrically connected to at least one of the inner semiconductive layers of the cables. The shield may be electrically connected to at least one of the outer semiconductive layers of the cables.

REMARKS

Favorable consideration of this application, as presently amended, is respectfully requested.

The present preliminary amendment is submitted to place the above-identified application in more proper format under United States practice. By the present preliminary amendment original Claims 1-8 are cancelled and new Claims 9-16 are presented for examination. New Claims 9-16 are deemed to be self-evident from the original disclosure, including original Claims 1-8, and thus are not deemed to raise any issues of new matter.

Any differences between new Claims 9-16 and original Claims 1-8 are deemed to at most broaden the scope of new Claims 9-16.

A new Abstract believed to be in more proper format under United States practice is also submitted herein.

The present application is believed to be in condition for a full and thorough examination on the merits. An early and favorable consideration of the present application is hereby respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
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Marked-Up Copy

Serial No:

Amendment Filed on:

11-26-2001

IN THE CLAIMS

Claims 1-8 (Canceled).

Claims 9-16 (New).

IN THE ABSTRACT

Abstract (New).

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Electric switching device

TECHNICAL FIELD

5 The present invention relates to an electric switching device of the kind described in the preamble to the independent claim 1. More particularly, the invention relates to a diverter switch or a switching device intended to be used in on-load tap-changers for voltages exceeding 1 kilovolt.

10

BACKGROUND ART

15 In an electrical power system it is desirable to provide voltage control in order to maintain the voltage in the system. Normally, voltage control is achieved by changing the ratio of transformers in the system. To this end, a controllable transformer has one or a plurality of regulating windings which, with the aid of on-load tap-changers, are connected to or disconnected from the primary or secondary winding of the transformer. In principle, there are two types of on-load tap-changers, namely, tap-changers of selector-switch type and tap-changers or diverter-switch type. In an on-load tap changer of diverter-switch type, the power is broken by means of a special switching device, a so-called diverter switch, and the choice of regulating winding is performed by a separate switching device, a so-called switch. In an on-load tap-changer of selector-switch type, the choice of regulating winding and power breaking is performed in the same operation and in the same component, the so-called selector-switch pole, in which both the diverter-switching function and the switching function are integrated. On-load tap-changers are available in mechanical designs, in which the switching and diverter-switching functions are performed by means of a switching device which closes and opens current paths by means of movable contact members operated by an operating device. On-load tap-changers are also available in completely electric designs, in which the switching and diverter-switching functions are performed by a semiconductor switch which closes and opens

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current paths by controlling the conductivity of semiconductors in the switching device.

From the published PCT application SE97/00875, a transformer with windings consisting of cable with an electrically conductive conductor, a semiconductive inner layer surrounding the conductor, an electrically insulating cable body surrounding the inner layer, and a semiconductive outer layer surrounding the cable body, is previously known. The inner layer is in electrical contact with the conductor and has the same potential as the conductor. The potential of the outer layer is controllable and is normally set at zero by grounding the outer layer. Such a winding has the property of enclosing in the cable body, between the inner and outer layers, the electric field which surrounds the conductor of the cable. Since the outer layer has a constant potential, adjacent winding turns need not be insulated from one another. If, in addition, the potential of the outer layer is connected to ground, the windings need not be insulated from the transformer core and the transformer may operate without any electrically insulating transformer oil, which results in a number of technical and environmental advantages.

When using a conventional on-load tap-changer for controlling a cable-wound transformer of the type described above, the inner layer, the cable body and the outer layer of the cables of the regulating windings must be broken when being connected to the on-load tap-changer. The field-enclosing power is thus lost together with many of the advantages of the cable-wound transformer. At the cable ends, expensive cable terminations must be used, and in the on-load tap-changer, insulating oil or large clearances are required to prevent electric flashovers.

SUMMARY OF THE INVENTION

The object of the present invention is to achieve a field-enclosing switching device comprising a switching means to

make or break a current path between a first cable and at least one second cable, which cables have an electric conductor, an inner semiconductive layer surrounding the conductor, an electrically insulating cable body surrounding the inner layer, and an outer semiconductive layer surrounding the cable body.

This object is achieved according to the invention with a new type of switching device according to the characteristic features described in the characterizing portion of the independent claim 1.

The switching device according to the invention comprises:

- a field-controlling means surrounding the switching means and comprising at least one conductive or semiconductive field-controlling body connected to a first potential,
- an electrically insulating solid body surrounding the field-controlling means,
- a conductive or semiconductive shield surrounding the body and connected to a second potential, and
- at least two contact members movably arranged in relation to each other, wherein one contact member is electrically connected to the conductor of the first cable and the other contact member is electrically connected to the conductor of the second cable, which contacts are operable by means of an operating device between a closed position and an open position.

The fact that the field-controlling body and the shield are conductive or semiconductive means in this context that, at room temperature, they have an electrical resistivity of less than 10,000 ohmmeters.

With respect to the field-enclosing power, the field-controlling means corresponds to the inner layers of the cables and functions in the switching device, in practice, as a continuation of these layers. In the same way, the insulating body corresponds to the cable bodies of the

cables, and the shield corresponds to the outer layers of the cables.

The field-controlling body preferably has a potential which essentially corresponds to the potential of the cable conductors, and the shield preferably has a potential which essentially corresponds to the potential of the outer layer of the cables.

According to one preferred embodiment of the invention, the field-controlling body is electrically connected to at least one of the inner layers of the cables.

According to another embodiment of the invention, the shield is electrically connected to at least one of the outer layers of the cables.

The insulating body assumes the voltage difference between the field-controlling body and the shield. The voltage difference between the cables in the open position is assumed in the switching means, for example in air gaps between movable contact members or by power semiconductor devices.

BRIEF DESCRIPTION OF THE DRAWINGS

In the following, the invention will be explained in greater detail with reference to the accompanying drawings, wherein

Figure 1 shows a first embodiment of the invention,

Figure 2 shows a second embodiment of the invention, and

Figures 3 and 4 show a third embodiment of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Figure 1 shows a first embodiment of a switching device 1 according to the invention, wherein the switching device 1

is connected to a first field-enclosing cable 2 via a first joint means 3 and to a second field-enclosing cable 4 via a second joint means 5. The switching device 1 is rotationally symmetrical and is shown in Figure 1 in a section along its axis. The cable 2 has an electric conductor 6, an inner semiconductive layer 7 surrounding the conductor 6, an electrically insulating cable body 8 surrounding the inner layer 7, and a first outer semiconductive layer 9 surrounding the cable body 8. In the same way, the second cable 4 has an electric conductor 10, an inner semiconductive layer 11 surrounding the conductor 10, an electrically insulating cable body 12 surrounding the inner layer 11, and an outer semiconductive layer 13 surrounding the cable body 12. The outer layers 9 and 13 are connected to ground.

The switching device 1 has a mechanical switching means for making and breaking a current path between the cable 2 and the cable 4. The cable means comprises an elongated contact member 14 of a magnetic material. The contact member 14 is movably arranged in a gas-filled switching chamber 15. The contact member 14 is in electrical contact with the conductor 10 via a connection 16 in the joint means 5. Further, the switching means has a stationary contact member 17 in electrical contact with the conductor 6, via a connection 18 in the joint means 3. On the outside of the switching device 1, a first 19 and a second 20 coil are arranged. Upon a closing signal from control equipment (not shown), the coil 19 generates a magnetic field in the switching chamber 15 in such a way that magnetic forces force the contact member 14 to an end position where it is in contact with the contact member 17 and electrically connects the conductor 6 to the conductor 10. Upon an opening signal from the control equipment, the coil 20 generates a magnetic field in the switching chamber 15 in such way that magnetic forces force the contact member 14 to an end position where it has such a position in relation to the contact member 17 that it is electrically insulated therefrom.

5 The switching device 1 has a field-controlling means in the form of an inner semiconductive layer 21 which surrounds the switching means. At one end, the layer 21 makes contact, via an inner semiconductive connecting layer 22 in the joint means 3, with the inner semiconductive layer 7 of the first cable 2. At its other end, the semiconductive layer 21 makes contact, via an inner semiconductive connecting layer 23 in the second joint means 5, with the inner semiconductive layer 11 of the second cable 4. The layer 21 surrounds the contact member 17 and is in electrical contact therewith along the whole of its length. The layer 21 also surrounds the contact member 14 but is electrically connected thereto along part of its length only, whereupon the inner surface of the layer 21 deviates from the surface of the contact member 14 and forms the radial limiting surface of the switching chamber 15.

10 Outside the layer 21, and making good contact therewith, an electrically insulating body 24 is arranged, which surrounds the layer 21 along substantially the whole of its length. The ends of the body 24 make contact with electrically insulating bodies 25 and 26 in the joint units 3 and 5.

15 Further, the switching device 1 has a shield, arranged outside the body 24, in the form of a semiconductive layer 27 which at one end, via a semiconductive connecting layer 28 in the first joint means 3, makes contact with the outer semiconductive layer 9 of the first conductor 2. At its other end, the layer 27 makes contact, via a second semiconductive connecting layer 29 in the second joint means 5, with the outer semiconductive layer 13 of the second conductor 4.

20 The layers 7, 22, 21, 23 and 11 together form a continuous inner semiconductive layer which surrounds all the current-carrying members of the switching device 1 and the cables 2 and 4. Surrounding this continuous layer, the bodies 8, 25, 24, 26 and 12 form a continuous electrically insulating body, and surrounding this continuous body, the layers 9,

28, 27, 29 and 13 form a continuous outer semiconductive layer.

When the switching device 1 is closed, the layer 21 serves
5 as an extension of the inner layers 7 and 11 of the cables.
In the same way, the body 24 functions as an extension of
the cables bodies 8 and 12, and the layer 27 as an extension
of the layers 9 and 13. Preferably, the layers 9, 28, 27, 29
and 13 are connected to ground, whereby a whole field-enclo-
10 sing arrangement is obtained.

When the switching device 1 is opened, a voltage difference
arises between the conductor 6 and the conductor 10. The end
positions of the contact member 14 must thereby be so sepa-
15 rated that no flashover occurs through the switching chamber
15. Along the layer 21 between the contact elements 14 and
17, a voltage gradient arises when the switching device 1 is
opened. To this end, the layer 21 must be dimensioned to
withstand this gradient.

20 Figure 2 shows a second embodiment of the switching device 1
according to the invention. A field-controlling device in
the form of a conductive cylinder 31 substantially surrounds
the switching means instead of the semiconductive layer 21
25 shown in Figure 1. The cylinder has no ability, when the
switching device is open, to maintain a voltage gradient in
its longitudinal direction, so the cylinder does not make
contact with the stationary contact member 17. A gap 32,
occupied by the insulating body 24, separates the contact
30 member 17 and the cylinder 31.

Figures 3 and 4 show a third embodiment of the switching
device according to the invention in the form of a switch.
The switch is able to connect, via a first connection ter-
35 minal 41, a first cable (not shown) to either a second cable
(not shown) via a second connection terminal 42, or to a
third cable (not shown) via a third connection terminal 43.
The switch has a switching means in the form of a movable
contact member 44 which, via an insulated drawbar 45, is

operable by an operating device 46. The switching means is able to make or break a current path between the first cable and the second cable, or between the first cable and the third cable. The switching means is substantially surrounded by a field-controlling means in the form of three conductive field-controlling bodies 47, 48 and 49. The field-controlling bodies are each in electrical contact with a cable via the connection conductors 50, 51, 52. Surrounding the field-controlling means is an electrically insulating body 24, and surrounding the body 24 is a shield in the form of a metal casing 53. The field-controlling bodies 47, 48 and 49 form a continuation of the inner semiconductive layer of the cables, the insulating body 24 forms a continuation of the cable bodies of the cables, and the metal casing 53 forms a continuation of the outer semiconductive layer of the cables.

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CLAIMS

1. A switching device (1) comprising a switching means for making or breaking a current path between a first cable (2) and at least one second cable (3), which cables have an electric conductor (6, 10), an inner semiconductive layer (7, 11) surrounding the conductor, an electrically insulating solid cable body (8, 12) surrounding the inner layer and an outer semiconductive layer (9, 13) surrounding the cable body,
- characterized** in that the switching device comprises:
- a field controlling device surrounding the switching means comprising at least one conductive or semiconductive field-controlling body (21, 31, 47, 48, 49) connected to a first potential,
 - an electrically insulating solid body (24) surrounding the field-controlling means,
 - a conductive or semiconductive shield (27, 53) surrounding the insulating solid body (24) connected to a second potential, and
 - at least two contact members (14, 17, 40) movably arranged in relation to one another, where one contact member is electrically connected to the conductor of the first cable (6) and the second contact member is electrically connected to the conductor of the second cable (10).
2. A switching device according to claim 1, **characterized** in that the contact members are capable of being operated by an operating device between a closed position and an open position.
3. A switching device according to claim 1 or 2, **characterized** in that the switching means comprises semiconductors which close or open the current path when controlling the conductivity of the semiconductors.
4. A switching device according to any of the preceding claims, **characterized** in that the field-controlling body

5 5. A switching device according to any of the preceding claims, **characterized** in that the shield (27, 53) is electrically connected to at least one of the outer semiconductive layers (9, 13) of the cables (2, 4).

7. A switching device according to any of the preceding claims, **characterized** in that a first and a second coil are arranged at the outside of the switching device and generate a magnetic field in the switching chamber which forces the contact members to a predetermined position.

8. A switching device according to any claim 1 to 5,
20 **characterized** in that the movable contact member (44) is
capable of being operated via an insulated drawbar (45).

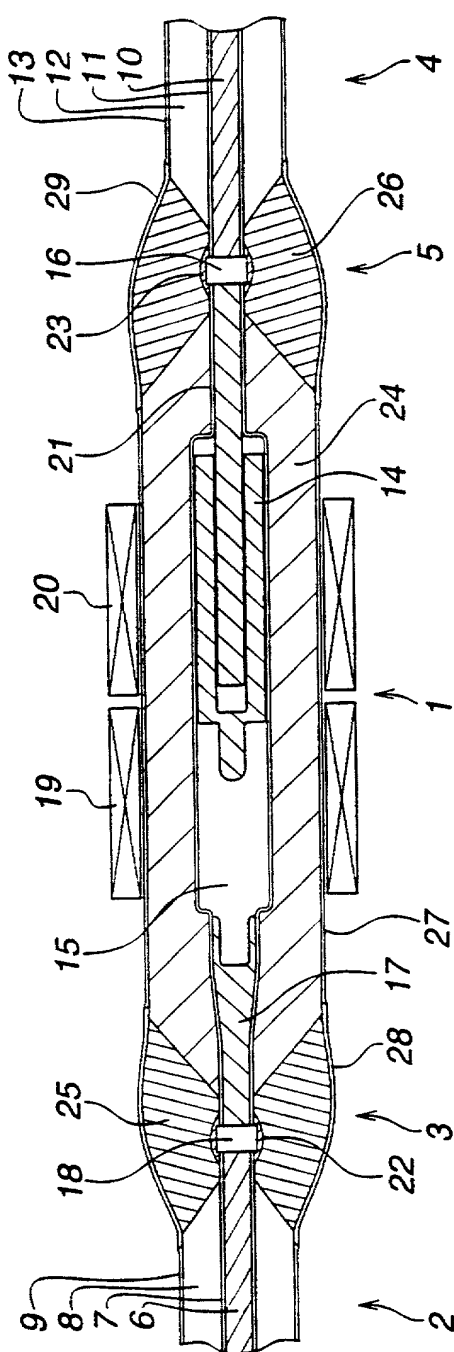


Fig. 1

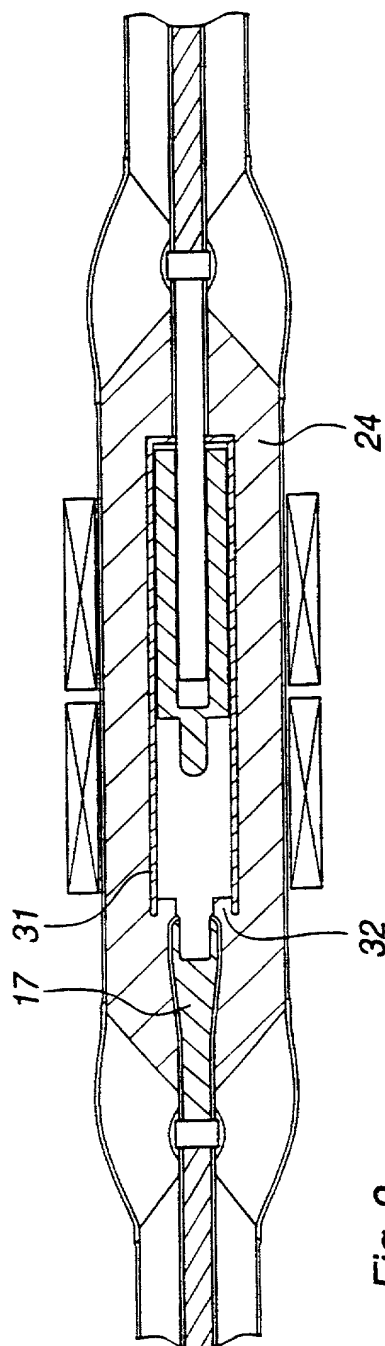


Fig. 2

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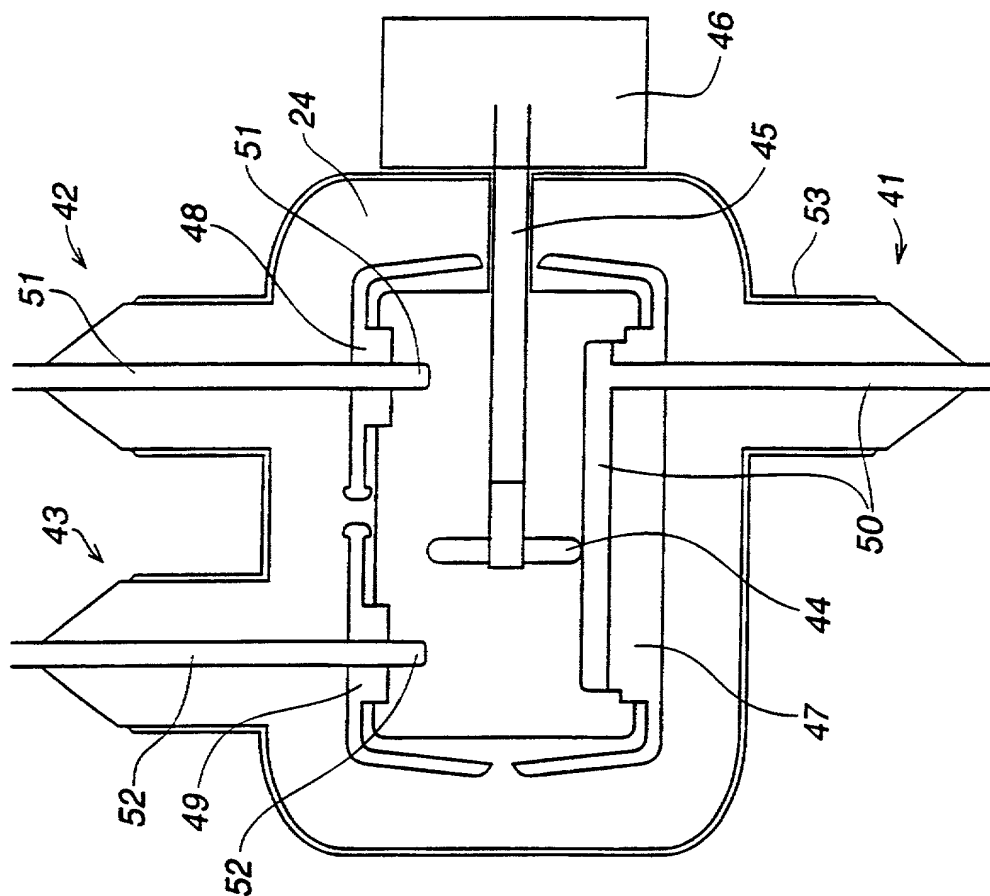


Fig. 4

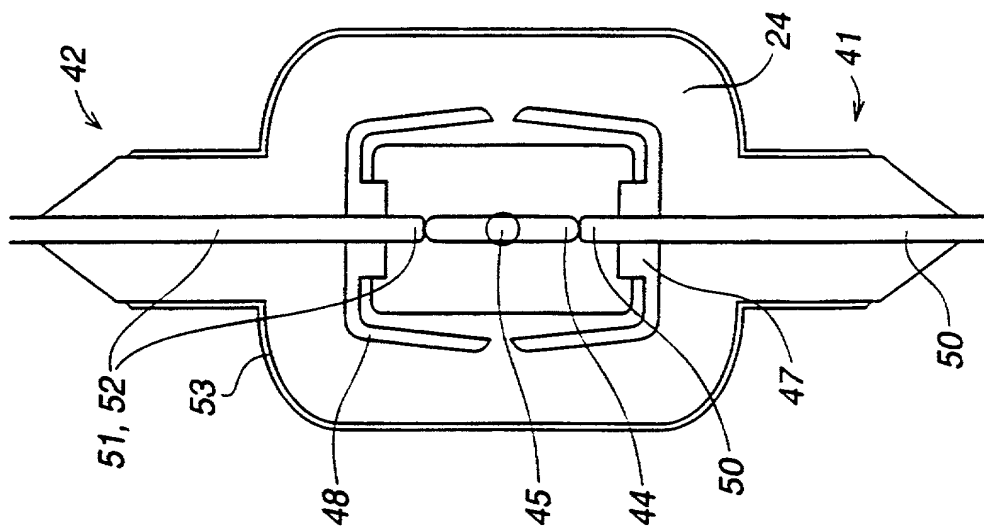


Fig. 3

Docket No. 215790US6PCT

Declaration and Power of Attorney for Patent Application

Försäkran och Fullmakt avgiven i samband med ansökan om patentskydd

Swedish Language Declaration

Som nedan nämnd uppfinnare förklarar jag att:

As a below named inventor, I hereby declare that:

Min hemvist, postadress och medborgarskap är som nedan angivits.

My residence, mailing address and citizenship are as stated next to my name.

Jag är övertygad om att jag är den ursprungliga, första och enda uppfinnaren (om endast ett namn uppges nedan) eller en av de ursprungliga och första meduppfinnarna (om flera namn anges nedan) av den uppfinning för vilken patent söks, benämnd:

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled.

ELECTRIC SWITCHING DEVICE

vars patentbeskrivning härmed bifogas om inte

the specification of which

☐ härtill bifogad☐ is attached hereto.☐ ingavs den _____☒ was filed on May 26, 2000som U.S. ansökningsnummer eller PCT
internationellt ansökningsnummeras United States Application Number or PCT
International Application Number

_____ och ändrades den

PCT/SE00/01099 and was amended on

_____ (eventuellt).

_____ (if applicable)

Jag förklarar härmed att jag har granskat och förstår innehållet i den ovannämnda beskrivningen och patentkräv med de eventuella ändringar som gjorts.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

Jag är medveten om min skyldighet att uppges information av väsentlig betydelse för patentbarhet i enlighet med "Title 37, Code of Federal Regulations, § 1.56."

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

8699

Swedish Language Declaration

Jag yrkar härmed prioritet enligt "Title 35, United States Code, § 119(a)-(d) or § 365(b)" för de(n) utländska ansökning(ar) som angivits nedan och avser patent eller uppfinnarcertifikat eller, under § 365(a) enligt ovan, för varje internationell PCT-ansökan som designerats åtminstone ytterligare ett land förutom U.S.A.; vidare har jag nedan identifierat, genom att korsa ruta, eventuella utländska patentansökningar, uppfinnarcertifikat eller internationella PCT-ansökningar som har inlämningsdatum före det inlämningsdatum för ansökan från vilket prioritet yrkas.

Prior Foreign Application(s)
Tidigare ansökning(ar) utomlands

9901985-3

(Number)
(Número)

Sweden

(Country)
(Pais)

Jag yrkar härmed på den förmon som i enlighet med "Title 35, United States Code, § 119(e)" tillkommer varje de Förenta Staternas hjälpansoökan som uppräknas nedan.

(Application No.)
(Ansökan,nr)

(Filing Date)
(Ingivningsdag)

Jag yrkar härmed de förmåner som i enlighet med "Title 35, United States Code, § 120" tillkommer varje ansökan av U.S.A. eller, under § 365(c) enligt ovan, varje internationell PCT-ansökan som designerats U.S.A., och angivits nedan, och om innehållet i samtliga patentkrav i denna ansökan inte angivits i den tidigare ansökan av U.S.A. eller i internationell PCT-ansökan på det sätt som krävs enligt första paragrafen i "Title 35, United States Code § 112," är jag medveten om skyldigheten att uppgä information, som utgör material för patentbarhet enligt "Title 37, Code of Federal Regulations, § 1.56" och som blivit tillgänglig under tiden mellan den tidigare ansökningens inlämningsdatum och datum för denna ansökans inlämnande såsom nationell ansökan eller som PCT-ansökan.

PCT/SE00/01099

(Application No.)
(Ansökan,nr)

May 26, 2000

(Filing Date)
(Ingivningsdag)

(Application No.)
(Ansökan,nr)

(Filing Date)
(Ingivningsdag)

Vidare förklarar jag att dessa uppgifter, såvitt jag vet, är sanningsenliga och alla uttalanden om information och vetande förmodas vara sanningsenliga; och att dessa uppgifter lämnats i medvetande om att avsiktligt falska uppgifter och likande kan straffas med böter eller fängelse eller båda delarna enligt "Section 1001 of Title of the United States Code", och att sådana avsiktligt falska uppgifter kan äventyra giltigheten av ansökningen eller ett därav beviljat patent.

FULLMAKT: I egenskap av uppfinnare befullmäktigar jag härmed följande advokat(er) och/eller ombud att tala och svara i denna ansökan inför US Patent & Trademark Office: (Ange namn och registreringsnummer nedan).

I hereby claim foreign priority under Title 35, United States Code, § 119 (a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Priority Claimed
Prioritetsrätt
Krävs inte

27 May 1999

(Day/Month/Year Filed)
(Día/Mes/Año de presentación)

☒

Yes
Sí

☐

No
No

I hereby claim the benefit under Title 35, United States Code, §119(e) of any United States provisional application(s) listed below.

(Application No.)
(Ansökan,nr)

(Filing Date)
(Ingivningsdag)

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

(Status: Patented, Pending, Abandoned)

(ärendets status: patent meddelat, ej avgjort, avslag)

(Status: Patented, Pending, Abandoned)

(ärendets status: patent meddelat, ej avgjort, avslag)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: (list name and registration number)

Swedish Language Declaration



022850

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Firma del inventor	Fecha	Inventor's signature	Date
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Nombre completo del segundo inventor conjunto, si lo hubiere		Full name of second joint inventor, if any	
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